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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,008	03/16/2001	Mohammed S. Anwar	95626/09UTL	8563

23873 7590 11/17/2003

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EXAMINER	
GODDARD, BRIAN D	

ART UNIT	PAPER NUMBER
2171	6

DATE MAILED: 11/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

4

Office Action Summary	Application No. 09/811,008	Applicant(s) ANWAR, MOHAMMED S.	
	Examiner Brian Goddard	Art Unit 2171	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 August 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 March 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. This communication is responsive to Amendment A, filed 28 August 2003.

2. Claims 1-20 are pending in this application. Claims 1, 5, 10, 15 and 18 are independent claims. In Amendment A, no claims were cancelled, no claims were added, and claims 1-7, 10-12 and 15-20 were amended. This action is made Final.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,006,225 to Bowman et al. in view of U.S. Patent No. 5,692,107 to Simoudis et al.

Referring to claim 1, Bowman teaches a system and method for analyzing a query and generating related results as claimed. See Figures 1 & 5-9 and the corresponding portions of Bowman's specification for this disclosure. Refer specifically to Figures 7-9 and the corresponding portions of the specification for the disclosure of the claimed invention. In particular, Bowman teaches a method for analyzing a query and generating related results comprising:

determining [Step 710] a keyword ['term in the query'] associated with the query;

generating [Steps 720 – 770] at least one term ['the top X related terms'] related to at least one keyword;

supplying the keywords and terms to a search engine ['the corresponding modified query is submitted to the search engine' (Column 14, lines 1-12)];

obtaining from the search engine at least one related result to the query ['identify a subset of query result items that include this related term' (Column 14, lines 25-45)]; and

generating at least one question [refined related query 910 (iterative...user can repeat indefinitely) 'This process could be repeated using additional related terms...' (Bowman: Column 14, line 32 et seq.)] related to the query derived from the related results [See Fig. 4], where the question is adapted to enhance information retrieval associated with the query [See Figs. 7-9].

Bowman does not explicitly disclose that the search engine includes "a data mining routine" to which the keywords and related terms are supplied as claimed. However, Bowman does disclose that "the catalog [database(s)] contains millions of items" and "it is important that the site provide an efficient mechanism for assisting users in locating items." (Column 4, lines 65-67) Furthermore, Bowman discloses the importance of discovering trends in the data and its usage. See column 7, line 60 – column 8, line 14 for this disclosure. These two points provide suggestion for using a data mining routine for locating trends and gathering other statistics about the data within the catalog database(s). Bowman also suggests that, "The search refinement methods of the invention may be implemented, for example, as part of...a document retrieval system, or any other type of computer system that provides searching capabilities to a community of users." (Column 4, lines 35-43) This provides direct

motivation for combining Bowman's search refinement system with any type of search system, including data mining routines.

Simoudis discloses a data mining system and method for extracting patterns and relations from data stored in multiple databases to generate predictive models (trends). See Figures 1-3 and the corresponding portions of Simoudis' specification for this disclosure. Furthermore, Simoudis' data mining engine accepts query terms (keywords or other terms) as input for the data mining (Steps 210-214).

It would have been obvious to one of ordinary skill in the art at the time the invention was made incorporate Simoudis' data mining engine (of Fig. 1) into Bowman's Web Server (131) or Query Server (132) and to supply the keywords and related terms generated by Bowman's search refinement system to the data mining engine in order to generate trends and gather other statistics, from any type of searchable database(s) such as those of Simoudis (114) or Bowman (133), relating to those keywords and related terms. One would have been motivated to do so because of the suggestions provided by Bowman, as described above.

Referring to claim 2, the system and method of Bowman in view of Simoudis as applied to claim 1 above discloses the invention as claimed. See Figure 7 and the corresponding portion of Bowman's specification for this disclosure. Bowman v. Simoudis teaches the method of claim 1, as above, "wherein the generating step comprises polling [Steps 720-730] a database [Query Correlation Table 137] for terms related to at least one keyword" as claimed.

Referring to claim 3, the system and method of Bowman in view of Simoudis as applied to claim 1 above discloses the invention as claimed. See Figures 8 & 9 and the corresponding portions of Bowman's specification for this disclosure. Bowman v. Simoudis teaches the method of claim 1, as above, "wherein the query [original or modified query] comprises a plurality of keywords [terms] and wherein the generating step generates terms [related terms (See column 3, lines 23-25 and column 13, lines 55-57)] related to at least one of the plurality of keywords [See Figs. 8-9 e.g.]" as claimed.

Referring to claim 4, the system and method of Bowman in view of Simoudis as applied to claim 1 above discloses the invention as claimed. See Figures 8 & 9 and the corresponding portions of Bowman's specification for this disclosure. Bowman's (as modified by Simoudis) search/mining refinement is iterative such that the system continues to generate related terms and related questions [queries] as long as the user continues to select the refined queries. In particular, Bowman v. Simoudis teaches the method of claim 3, as above, further comprising:

"selecting at least one generated term ['the user clicks on one of these links' (Column 14, line 6)];

supplying the keywords and the selected terms ['the corresponding modified query is submitted' (Column 14, lines 6-7)] to the data mining routine [See the discussion regarding claim 1 above];

selecting the at least one question [refined related query 910];

supplying the selected question to the data mining routine [iterative refinement (Bowman: Column 14, line 32 et seq.) and See claim 1];

obtaining from the data mining routine at least one related result [920] to the query; and

generating at least one sub-question [further refined related query 910 (See Bowman Fig. 9 and column 14, line 32 et seq.)] related to the question derived from the related results, where the sub-question is adapted to enhance information retrieval associated with the query" as claimed.

Referring to claim 5, the system and method of Bowman in view of Simoudis as discussed above with regard to claim 1 discloses the invention as claimed. See the discussions regarding claims 1-4 above for the details of this disclosure. Bowman v. Simoudis teaches "a method comprising the steps of:

constructing a query ['a user submits a query to the web site 130' (Bowman: Column 7, line 14 et seq.)] comprising keywords [terms] and constraints [See Figure 2: prefixes (title, author, subject, etc. - See column 6, lines 59-64) and match types (exact name, start of last name, exact title, etc.)];

generating [Bowman: Fig. 7] related keywords or related constraints;

supplying the keywords, the constraints, the related keywords or the related constraints to a data mining routine [See claim 1 above]; and

obtaining from the data mining routine "as is" results [Bowman: 920] or information, related results [Bowman: 920 (See the corresponding portion of the specification and the discussion of claim 1 above)] or information and a question related

to the query adapted to enhance query results [Bowman: 910] or information" as claimed.

Referring to claim 6, the system and method of Bowman in view of Simoudis as applied to claim 5 above discloses the invention as claimed. See Figures 8 & 9 and the corresponding portions of Bowman's specification for this disclosure. Bowman v. Simoudis teaches the method of claim 5, as above, "further comprising the steps of:

selecting the question ['the user clicks on one of these links' (Bowman: Column 14, line 6)]; and

obtaining "as is" results or information, related results or information and a sub-question related to the question adapted to enhance query results or information [query refinement process (iterative...user can repeat indefinitely) 'This process could be repeated using additional related terms...' (Bowman: Column 14, line 32 et seq.)]" as claimed.

Claims 7 and 8 are rejected on the same basis as claim 6. Bowman's query refinement process is iterative, meaning the process can be repeated as many times as desired to refine the query to the user's satisfaction. See column 14, line 32 et seq. of Bowman's specification for this disclosure. Thus, Bowman's method teaches repeating the steps of selecting a refinement [910] (question or sub-question) and obtaining the related results [920] until the user is satisfied with the results and chooses to stop the refinement process.

Referring to claim 9, the system and method of Bowman in view of Simoudis as applied to claim 5 above discloses the invention as claimed. See Figure 2 and the

corresponding portion of Bowman's specification, and the discussion regarding claim 5 for the details of this disclosure. Bowman's query constraints include containment constraints (exact name, start of last name, exact title, etc.), grouping constraints (prefixes: title, author, subject, etc.), and/or data constraints (particular item genre out of the entire catalog – books in the example provided) as claimed.

Claim 10 is rejected on the same basis as claim 5, in light of the discussion regarding claim 1. See the discussions of claims 1 and 5 above for the details of this disclosure.

Claim 11 is rejected on the same basis as claim 6, in light of the basis for claim 10 above. See the discussions regarding claims 1, 5 and 6 for the details of this disclosure.

Claims 12 and 13 are rejected on the same basis as claims 7 and 8 respectively, in light of the basis for claim 10 above. See the discussions regarding claims 1, 5 and 6-8 for the details of this disclosure.

Claim 14 is rejected on the same basis as claim 9, in light of the basis for claim 10 above. See the discussions regarding claims 1, 5 and 9 for the details of this disclosure.

4. Claims 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman in view of Simoudis as applied to claim 1 above, and further in view of U.S. Patent No. 6,266,668 to Vanderveldt et al.

Referring to claim 15, the system and method of Bowman in view of Simoudis as discussed above with regard to claim 1 discloses the invention as claimed. See Figure 1 and the corresponding portion of Bowman's specification, Figure 1 and the corresponding portion of Simoudis' specification, and the combination of these systems as applied in claim 1 above. In particular, the combination of Bowman and Simoudis teaches "a system comprising:

a remote digital processing unit [Bowman: User Computers 110] including an operating system, communication routines, and a user interface having a query construction routine [Bowman: Figure 2] and a results display routine [Bowman: Figure 9];

an application server [Bowman: Web Server 131 and Query Server 132] including an operating system, communication routines, and a query information retrieval content enhancing sub-system [Bowman: Related Term Selection Process 139 & Simoudis: Data Mining Engine of Figure 1 (See claim 1 above)] having a controller [Bowman: 132 & Simoudis: 106], a library of database interfaces [Simoudis: 112], a library of data mining routines [Simoudis: 104 & 104'], a database (DB) middleware component [Simoudis: 105 & 105'] and a query/results database [Bowman: 137], where the subsystem generates related results or information and generates questions related to the query to enhance information retrieval from a query constructed at the remote digital processing unit [See the discussions regarding claims 1-14 above];

a database server [Simoudis: 106] including an operating system, communication routines, a database [Simoudis: 114] and database services [Simoudis: 112]; and

a network [Bowman: 120] interconnecting the remote digital processing unit, the application server and the database server [Bowman: See Figure 1] as claimed.

Neither Bowman nor Simoudis explicitly discloses an operating system and communication routines in each of the computer systems, as claimed. Furthermore, neither reference teaches "a user profiler" as claimed.

Vanderveldt discloses a data mining system and method similar to that of Simoudis. See Figures 1-3 and the corresponding portions of Vanderveldt's specification for this disclosure. In particular, Vanderveldt teaches the inclusion of operating systems and communications software (routines) in typical computer systems used to "execute the web pages". See column 9, lines 41-53 for this disclosure. Vanderveldt also discloses a user profiler ['neural network trained upon the user profile' (Column 4, lines 64-65)] for extracting information from user profiles to be used in the data mining.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include operating systems and communications software, such as those of Vanderveldt, into the computer systems of Bowman in view of Simoudis above. One would have been motivated to do so in order to execute the web-based functions of Bowman and Simoudis' methods, as deemed necessary by Vanderveldt's disclosure.

Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include Vanderveldt's user profiler into the data mining subsystem of Bowman in view of Simoudis. One would have been motivated to do so

because this would provide more effective results by including each individual user's search tendencies (represented by the profile) into the data mining routine as effectively as possible.

Referring to claim 16, the system and method of Bowman in view of Simoudis and Vanderveldt as applied to claim 15 above discloses the invention as claimed. See Figure 1 and the corresponding portion of Simoudis' specification for this disclosure. Simoudis' data mining library [104 & 104'], as included in the combined system, includes "a cluster DMR" (Clustering 104') as claimed.

Referring to claim 17, the system and method of Bowman in view of Simoudis and Vanderveldt as applied to claim 15 above discloses the invention as claimed. See Figures 1 & 4 and the corresponding portions of Simoudis' specification for this disclosure. Simoudis' databases (114) can include any type of database having an associated database management system (DBMS), including relational databases as disclosed in the example of Figure 4. See column 4, lines 26-34; column 5, lines 59-65; and claim 3 for this disclosure.

Claim 18 is rejected on the same basis as claim 15, in light of the discussions regarding claims 1 and 5 above. See the discussions regarding claims 1, 5 and 15 for the details of this disclosure.

Claims 19 and 20 are rejected on the same basis as claims 16 and 17 respectively, in light of the basis for claim 18 above. See the discussions regarding claims 1, 5 and 15-17 for the details of this disclosure.

Response to Arguments

5. Applicant's arguments filed 28 August 2003 have been fully considered but they are not persuasive.

Referring to applicant's remarks on pages 12-13 regarding the section 103 rejection of claims 1-14: Applicant argues that Bowman has nothing to do with data mining, and seemingly argues that there is therefore no motivation or suggestion to combine. Further, applicant argues that Simoudis does not teach or suggest a discovery process based on questions constructed from the information retrieved from the data mining process.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Furthermore, the examiner disagrees with applicant's assertion that Bowman has nothing to do with data mining. Applicant argues, "The cited passage relates to how to build better correlation tables...for associating query search terms with related search terms. Thus, the "analysis" that occurs in Bowman is...not the type of data analysis taught in this invention." (Paper # 5, page 12) Regardless of the "type of data analysis taught in this invention", it is "data mining" that is claimed. Clearly Bowman teaches data mining, even in its most rudimentary form, of the daily query log to generate the query correlation tables. Even if applicant does not believe Bowman's "data analysis" to be data mining, Bowman explicitly states, "The search refinement

methods of the invention may be implemented, for example, as part of... a document retrieval system, or any other type of computer system that provides searching capabilities to a community of users." (Column 4, lines 35-43) This provides direct motivation for combining Bowman's search refinement system with any type of search system, including data mining routines.

Referring to applicant's remarks on page 13 regarding the section 103 rejection of claims 1-14: Applicant argues that Bowman does not teach or suggest constructing related queries or questions for subsequent searching of data in a database.

The examiner disagrees for the following reasons: Referring to Figure 9 and the corresponding portion of Bowman's specification, Bowman teaches that after an initial user search, related queries [910 (e.g. query including the terms "outdoor trail" and "bike")] are constructed for subsequent searching [the user can click on one of the related queries to submit it] of data in the database. Furthermore, this process is iterative, meaning that the user can repeat the refinement of the query indefinitely such that the system constructs related queries after each search iteration.

Referring to applicant's remarks on page 14 regarding the section 103 rejection of claims 1-14: Applicant argues that the combination of Bowman and Simoudis does not teach or suggest a process for mining data down a pathway generated by posing questions....

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., mining data down a pathway generated by posing questions) are not recited in the

rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Referring to applicant's remarks on pages 15-16 regarding the section 103 rejection of claims 15-20: Applicant rehashes the arguments relating to claims 1-14.

The Office maintains the rejections for the reasons stated above.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Goddard whose telephone number is 703-305-7821. The examiner can normally be reached on M-F, 9 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

bdg
November 13, 2003

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